



## Alaska Department of Environmental Conservation

### Office of the State Veterinarian

#### Fish Monitoring Program

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### Total Mercury in Alaska's Fish

Fish Samples collected: 2001-2017

Concentration in mg/Kg wet weight

Non-detects were assigned the value of 1/2 the Reporting Limit

Visit the Fish Monitoring Program webpage for more information:

<http://www.dec.alaska.gov/eh/vet/fish-monitoring-program>

For State of Alaska fish consumption recommendations visit:

<http://www.dhss.alaska.gov/dph/Epi/eph/Pages/fish/default.aspx>

Table 1: Total Mercury in Marine Fish

mg/Kg wet weight

Species	Tissue	n	ND	A mean	SD	G mean	Median	Min	Max
Alaska Plaice	Fillet	31	0	0.04	0.02	0.03	0.03	0.02	0.12
Arctic Flounder	Whole Body	4	0	0.02	0.00	0.02	0.02	0.02	0.02
Arctic Sculpin	Whole Body	1	0	0.02	NA	0.02	0.02	0.02	0.02
Atka Mackerel	Fillet	4	0	0.07	0.03	0.07	0.06	0.05	0.12
Atka Mackerel	Whole Body	5	0	0.04	0.02	0.04	0.04	0.02	0.06
Big Skate	Fillet	112	0	0.14	0.09	0.12	0.11	0.02	0.48
Black Rockfish	Fillet	80	1	0.13	0.10	0.10	0.10	0.01	0.53
Black Rockfish	Whole Body	7	0	0.13	0.09	0.10	0.07	0.05	0.27
Blue Shark	Fillet	1	0	1.34	NA	1.34	1.34	1.34	1.34
Butter Sole	Whole Body	1	0	0.05	NA	0.05	0.05	0.05	0.05
China Rockfish	Fillet	1	0	0.37	NA	0.37	0.37	0.37	0.37
Copper Rockfish	Fillet	4	0	0.18	0.10	0.16	0.16	0.09	0.31
Dusky Rockfish	Fillet	63	0	0.09	0.11	0.05	0.04	0.01	0.42
Dusky Rockfish	Whole Body	20	0	0.14	0.13	0.10	0.08	0.04	0.61
Flathead Sole	Fillet	15	0	0.06	0.02	0.05	0.06	0.02	0.10
Fourhorn Sculpin	Whole Body	6	0	0.05	0.02	0.05	0.05	0.02	0.07
Fourhorn Sculpin	C-Whole Body	1	0	0.01	NA	0.01	0.01	0.01	0.01
Great Sculpin	Whole Body	2	0	0.07	0.00	0.07	0.07	0.07	0.07
Kelp Greenling	Fillet	1	0	0.11	NA	0.11	0.11	0.11	0.11
Kelp Greenling	Whole Body	18	0	0.16	0.14	0.12	0.11	0.01	0.52
Lingcod	Fillet	288	0	0.44	0.29	0.34	0.39	0.03	1.67
Longnose Skate	Fillet	114	0	0.39	0.19	0.35	0.37	0.10	1.00
Northernrock Sole	Fillet	20	0	0.04	0.01	0.04	0.04	0.02	0.06
Northernrock Sole	Whole Body	19	0	0.06	0.03	0.05	0.06	0.01	0.14
Pacific Cod	Fillet	171	2	0.12	0.09	0.09	0.10	0.01	0.50
Pacific Halibut	Fillet	2978	7	0.30	0.28	0.21	0.20	0.01	2.00
Quillback Rockfish	Fillet	20	0	0.41	0.21	0.36	0.40	0.10	1.00
Rock Greenling	Whole Body	16	0	0.12	0.08	0.10	0.08	0.05	0.32
Rougeye Rockfish	Fillet	74	0	0.11	0.14	0.07	0.06	0.02	0.87
Sablefish	Fillet	315	5	0.14	0.18	0.07	0.08	0.01	1.19
Sablefish	Whole Body	3	0	0.15	0.10	0.13	0.09	0.09	0.26
Salmon Shark	Fillet	97	0	1.37	0.29	1.33	1.32	0.76	2.07
Shorthorn Sculpin	Fillet	1	0	0.19	NA	0.19	0.19	0.19	0.19
Shorthorn Sculpin	Whole Body	1	0	0.11	NA	0.11	0.11	0.11	0.11
Shortraker Rockfish	Fillet	8	0	0.54	0.13	0.53	0.52	0.39	0.81
Silvergray Rockfish	Fillet	10	1	0.11	0.12	0.07	0.07	0.01	0.42
Sleeper Shark	Fillet	1	0	0.89	NA	0.89	0.89	0.89	0.89
Southernrock Sole	Whole Body	1	1	0.00	NA	0.00	0.00	0.00	0.00
Spiny Dogfish	Fillet	66	0	0.70	0.28	0.63	0.72	0.10	1.34
Starry Flounder	Fillet	1	0	0.08	NA	0.08	0.08	0.08	0.08
Starry Flounder	Whole Body	1	0	0.06	NA	0.06	0.06	0.06	0.06
Starry Flounder	C-Whole Body	3	0	0.03	0.02	0.02	0.02	0.02	0.05
Walleye Pollock	Fillet	185	101	0.04	0.06	0.02	0.01	0.00	0.39
Yelloweye Rockfish	Fillet	117	1	0.54	0.31	0.43	0.47	0.00	1.33
Yellowfin Sole	Fillet	33	0	0.06	0.02	0.06	0.06	0.03	0.09

Species	Tissue	n	ND	A mean	SD	G mean	Median	Min	Max
Yellowtail Rockfish	Fillet	7	0	0.06	0.02	0.06	0.07	0.03	0.08

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n = Sample Size; ND = Non Detect; A Mean = Arithmetic Mean; G Mean = Geometric Mean; SD = Standard Deviation; C = Composite of multiple individuals

Table 2: Total Mercury in Salmonids (Salmon, Whitefish, Grayling, Char)

mg/Kg wet weight

Species	Tissue	n	ND	A mean	SD	G mean	Median	Min	Max
Arctic Char	Fillet	13	0	0.07	0.08	0.05	0.04	0.02	0.25
Arctic Char	Whole Body	10	0	0.03	0.01	0.03	0.03	0.02	0.06
Arctic Cisco	Fillet	21	0	0.02	0.00	0.02	0.02	0.01	0.02
Arctic Cisco	Whole Body	1	0	0.02	NA	0.02	0.02	0.02	0.02
Arctic Grayling	Fillet	47	0	0.09	0.04	0.08	0.08	0.03	0.18
Arctic Grayling	Whole Body	3	0	0.02	0.01	0.02	0.03	0.01	0.03
Arctic Grayling	C-Juvenile	1	0	0.05	NA	0.05	0.05	0.05	0.05
Arctic Grayling	C-Whole Body	11	0	0.05	0.03	0.04	0.06	0.01	0.10
Bering Cisco	Fillet	5	0	0.06	0.01	0.06	0.06	0.05	0.09
Broad Whitefish	Fillet	48	2	0.06	0.04	0.05	0.06	0.00	0.21
Chum Salmon	Fillet	280	10	0.04	0.01	0.04	0.04	0.01	0.10
Chum Salmon	Whole Body	2	2	0.01	0.00	0.01	0.01	0.01	0.01
Chum Salmon	C-Juvenile	1	0	0.10	NA	0.10	0.10	0.10	0.10
Coho Salmon	Fillet	321	27	0.04	0.01	0.04	0.04	0.01	0.11
Coho Salmon	Belly	10	0	0.04	0.01	0.04	0.04	0.02	0.05
Coho Salmon	Whole Body	63	0	0.03	0.01	0.03	0.03	0.01	0.06
Coho Salmon	Eggs	20	10	0.01	0.00	0.01	0.01	0.00	0.01
Coho Salmon	Testis	6	0	0.01	0.00	0.01	0.01	0.01	0.01
Coho Salmon	Fry Whole	22	0	0.02	0.02	0.02	0.02	0.01	0.07
Coho Salmon	C-Fry	7	0	0.03	0.03	0.02	0.02	0.01	0.08
Coho Salmon	Juvenile Whole	19	6	0.09	0.11	0.03	0.07	0.00	0.32
Coho Salmon	C-Juvenile	9	0	0.19	0.10	0.15	0.22	0.04	0.33
Coho Salmon	C-Whole Body	2	0	0.02	0.01	0.02	0.02	0.01	0.03
Dolly Varden	Fillet	65	0	0.07	0.10	0.04	0.03	0.01	0.55
Dolly Varden	Whole Body	49	0	0.04	0.03	0.03	0.03	0.01	0.14
Humpback Whitefish	Fillet	110	0	0.06	0.03	0.06	0.06	0.01	0.18
Humpback Whitefish	Whole Body	24	0	0.05	0.02	0.04	0.04	0.01	0.12
King Salmon	Fillet	237	2	0.06	0.02	0.06	0.06	0.01	0.16
King Salmon	Whole Body	16	0	0.05	0.02	0.04	0.05	0.02	0.09
King Salmon	C-Fry	7	0	0.04	0.02	0.04	0.03	0.02	0.07
King Salmon	C-Juvenile	3	0	0.01	0.00	0.01	0.01	0.01	0.01
Lamprey	Whole Body	10	0	0.03	0.01	0.03	0.03	0.02	0.04
Least Cisco	Fillet	31	0	0.05	0.02	0.05	0.05	0.02	0.10
Least Cisco	Whole Body	1	0	0.01	NA	0.01	0.01	0.01	0.01
Pink Salmon	Fillet	185	104	0.04	0.07	0.02	0.01	0.01	0.36
Pygmy Whitefish	Whole Body	1	0	0.04	NA	0.04	0.04	0.04	0.04
Round Whitefish	Fillet	12	0	0.08	0.06	0.06	0.07	0.01	0.20
Sheefish	Fillet	44	0	0.14	0.05	0.13	0.13	0.06	0.26
Sheefish	Whole Body	5	0	0.09	0.03	0.09	0.09	0.04	0.13
Sheefish	Eggs	1	0	0.01	NA	0.01	0.01	0.01	0.01
Sheefish	Testis	4	0	0.03	0.01	0.02	0.03	0.01	0.03
Sheefish	Kidney	21	0	0.17	0.08	0.16	0.16	0.06	0.37
Sockeye Salmon	Fillet	286	27	0.04	0.03	0.04	0.04	0.01	0.30
Sockeye Salmon	Whole Body	56	0	0.03	0.01	0.03	0.03	0.01	0.06
Sockeye Salmon	Eggs	2	1	0.01	0.00	0.01	0.01	0.00	0.01

Species	Tissue	n	ND	A mean	SD	G mean	Median	Min	Max
Sockeye Salmon	C-Fry	3	0	0.05	0.02	0.05	0.06	0.03	0.06
Sockeye Salmon	C-Whole Body	1	0	0.09	NA	0.09	0.09	0.09	0.09

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n = Sample Size; ND = Non Detect; A Mean = Arithmetic Mean; G Mean = Geometric Mean; SD = Standard Deviation; C = Composite of multiple individuals

**Table 3: Total Mercury in Marine Forage Fish**

mg/Kg wet weight

Species	Tissue	n	ND	A mean	SD	G mean	Median	Min	Max
Capelin	C-Whole Body	1	1	0.00	NA	0.00	0.00	0.00	0.00
Eulachon	C-Whole Body	7	7	0.00	0.00	0.00	0.00	0.00	0.00
Pacific Herring	C-Whole Body	16	1	0.03	0.02	0.02	0.02	0.00	0.06
Rainbow Smelt	Fillet	1	0	0.03	NA	0.03	0.03	0.03	0.03
Rainbow Smelt	Whole Body	12	0	0.04	0.08	0.02	0.02	0.01	0.28
Rainbow Smelt	C-Whole Body	2	0	0.06	0.06	0.04	0.06	0.01	0.10
Saffron Cod	Whole Body	22	0	0.02	0.01	0.02	0.02	0.01	0.04
Sand Lance	C-Whole Body	2	0	0.06	0.08	0.03	0.06	0.01	0.12

n = Sample Size; ND = Non Detect; A Mean = Arithmetic Mean; G Mean = Geometric Mean; SD = Standard Deviation; C = Composite of multiple individuals

**Table 4: Total Mercury in Marine Invertebrates**

mg/Kg wet weight

Species	Tissue	n	ND	A mean	SD	G mean	Median	Min	Max
Blue Mussel	Invert Whole Tissue	4	0	0.01	0.01	0.01	0.01	0.01	0.02
Blue Mussel	C-Invert Whole	62	2	0.03	0.03	0.02	0.01	0.00	0.13
Butter Clam	Invert Whole Tissue	5	2	0.01	0.00	0.01	0.01	0.00	0.01
Butter Clam	C-Invert Whole	3	1	0.01	0.00	0.01	0.00	0.00	0.01
Chiton	Invert Whole Tissue	2	0	0.01	0.00	0.01	0.01	0.01	0.01
Cockle	Invert Whole Tissue	5	0	0.02	0.01	0.02	0.02	0.01	0.03
Cockle	C-Invert Whole	7	1	0.02	0.05	0.01	0.01	0.00	0.13
Decorator Crab	Invert Whole Tissue	1	0	0.02	NA	0.02	0.02	0.02	0.02
Dungeness Crab	Invert Whole Tissue	2	0	0.03	0.00	0.03	0.03	0.02	0.03
Geoduck	Invert Viscera	7	0	0.04	0.01	0.04	0.04	0.03	0.05
Hairytriton Snail	Invert Whole Tissue	1	0	0.11	NA	0.11	0.11	0.11	0.11
Hermit Crab	Invert Whole Tissue	1	1	0.00	NA	0.00	0.00	0.00	0.00
Horse Clam	C-Invert Whole	1	0	0.01	NA	0.01	0.01	0.01	0.01
Macoma Clam	C-Invert Whole	1	0	0.01	NA	0.01	0.01	0.01	0.01
Neptunea hero	Invert Whole Tissue	3	0	0.02	0.01	0.01	0.01	0.01	0.03
Oysters	Invert Whole Tissue	16	0	0.01	0.01	0.01	0.01	0.01	0.02
Pacific Octopus	Invert Whole Tissue	6	0	0.02	0.00	0.01	0.02	0.01	0.02
Razor Clam	Invert Muscle	2	0	0.01	0.00	0.01	0.01	0.01	0.01
Ribbon Worm	Invert Whole Tissue	4	0	0.04	0.02	0.04	0.04	0.02	0.06
Ribbon Worm	C-Invert Whole	1	0	0.04	NA	0.04	0.04	0.04	0.04
Scallop	Invert Whole Tissue	20	0	0.03	0.01	0.03	0.03	0.02	0.04
Softshell Clam	Invert Whole Tissue	4	0	0.02	0.01	0.02	0.02	0.01	0.03
Softshell Clam	C-Invert Whole	10	0	0.05	0.05	0.04	0.02	0.01	0.14
Squid	C-Invert Whole	5	5	0.00	0.00	0.00	0.00	0.00	0.00

n = Sample Size; ND = Non Detect; A Mean = Arithmetic Mean; G Mean = Geometric Mean; SD = Standard Deviation; C = Composite of multiple individuals

**Table 5: Total Mercury in Freshwater Fishes**

mg/Kg wet weight

Species	Tissue	n	ND	A mean	SD	G mean	Median	Min	Max
Alaska Blackfish	Whole Body	3	0	0.02	0.01	0.02	0.02	0.02	0.03
Alaska Blackfish	C-Whole Body	3	0	0.02	0.01	0.02	0.02	0.01	0.03
Arctic Grayling	Fillet	47	0	0.09	0.04	0.08	0.08	0.03	0.18
Arctic Grayling	Whole Body	3	0	0.02	0.01	0.02	0.03	0.01	0.03
Arctic Grayling	C-Juvenile	1	0	0.05	NA	0.05	0.05	0.05	0.05
Arctic Grayling	C-Whole Body	11	0	0.05	0.03	0.04	0.06	0.01	0.10
Burbot	Fillet	27	1	0.33	0.28	0.20	0.25	0.01	0.85
Cutthroat Trout	Whole Body	7	0	0.12	0.05	0.11	0.09	0.07	0.23
Lake Trout	Fillet	54	0	0.35	0.18	0.30	0.32	0.06	0.74
Lake Trout	Whole Body	33	0	0.27	0.13	0.23	0.27	0.06	0.54
Longnose Sucker	Fillet	3	0	0.07	0.01	0.07	0.07	0.06	0.08
Northern Pike	Fillet	581	1	0.40	0.28	0.30	0.33	0.01	1.36
Northern Pike	Whole Body	40	0	0.15	0.07	0.13	0.15	0.05	0.34
NS Stickleback	C-Whole Body	13	0	0.03	0.03	0.02	0.02	0.01	0.09
Rainbow Trout	Fillet	62	0	0.11	0.09	0.06	0.08	0.00	0.33
Rainbow Trout	Whole Body	11	0	0.16	0.04	0.16	0.16	0.11	0.25
Slimy Sculpin	Whole Body	62	0	0.03	0.02	0.02	0.02	0.01	0.09
Slimy Sculpin	C-Whole Body	15	0	0.07	0.06	0.05	0.06	0.01	0.25
TS Stickleback	Whole Body	13	0	0.07	0.02	0.07	0.07	0.04	0.11
TS Stickleback	C-Whole Body	7	0	0.15	0.10	0.12	0.14	0.03	0.28

n = Sample Size; ND = Non Detect; A Mean = Arithmetic Mean; G Mean = Geometric Mean; SD = Standard Deviation; C = Composite of multiple individuals